82 Dysphagia

DOUGLAS C. WOLF

Definition

Dysphagia means difficulty swallowing. For this diagnosis it is critical that related symptoms be associated with the act of swallowing of a liquid or solid bolus. When unassociated with swallowing, the sensation of fullness in the upper esophagus suggests *globus hystericus,* which is distinct from dysphagia. Globus hystericus is often a sign of a functional disorder, but it may also represent an abnormality of the pharyngeal or upper esophageal musculature.

Unlike many symptoms, such as chest pain or gastrointestinal bleeding, which may be associated with esophageal disease, dysphagia specifically ascribes the problem to the esophagus. Causes of dysphagia basically fall into two groups: obstructive lesions and motor disorders. A more specific classification categorizes the cause of dysphagia according to location: preesophageal or oropharyngeal dysphagia, esophageal or transport dysphagia, postesophageal or esophagogastric dysphagia, and paraesophageal or extrinsic dysphagia. Although useful for classification, there is overlap between these categories.

Technique

A careful history is of critical importance in the evaluation of the patient with dysphagia because approximately 80% of esophageal disorders can be diagnosed by history alone.

The examiner should ask the patient to describe the symptoms in his or her own words. One should be attuned to key terms such as "food sticking," "chest pain," "painful swallowing" (odynophagia), or pointing to the area of the chest where pain occurs or food sticks. Multiple symptoms such as these increase the likelihood that an organic disorder of the esophagus is present. To make the diagnosis of dysphagia, such symptoms must be associated with swallowing.

The patient should be asked specific questions relating to dysphagia (Table 82.1). This should generally proceed as follows: "Do you have difficulty swallowing?" "Is it for solids, liquids, or both?" "Is the difficulty swallowing greater for solids [obstruction either intrinsic or extrinsic to the esophagus], or is the difficulty greater for liquids or equal for both [motor disorder]?"

"Can you localize the dysphagia?" Usually, the patient can point to a location in the retrosternal area. This localization is helpful, although it may be deceiving. Dysphagia of the upper esophagus localizes to the upper esophagus but dysphagia of the lower esophagus may be referred to any level of the retrosternal area.

"How long has the swallowing difficulty been present?" "Is it new, or chronic and recurrent with intervening periods of normal swallowing?" "Is it chronic and progressive?" Chronic and progressive dysphagia suggests neoplasm or stricture. Intermittent dysphagia suggests a motility disturbance or a Schatski ring, a typical cause of obstructive intermittent dysphagia. If the dysphagia is recurrent or episodic: "How long do the periods of dysphagia versus normal swallowing last?" "Is there a trend toward worsening or improvement [improvement with resolving reflux esophagitis or spontaneous intermittent resolution with motor disorders]?"

"Is heartburn associated with the dysphagia or has it preceded or been associated with the dysphagia in the past [reflux esophagitis]? Is there pain on swallowing [odynophagia]?" The odynophagia of esophageal motility disorders may be aggravated by temperature extremes, particularly cold liquids. Heartburn or the odynophagia of esophageal motor abnormalities may occur in the absence of dysphagia. "Does the swallowing difficulty occur with the first swallow or initiation of swallowing [suggestive of central, neuromuscular, or pharyngeal disease]?"

Table 82.1
Standard Questions in the Evaluation of Dysphagia

Do you have difficulty swallowing? In what way?
Is the swallowing difficulty greater for solids or liquids?
Do you have this sensation without swallowing food?
How long has swallowing difficulty been present?
Can you localize the dysphagia?
Has heartburn been associated with the dysphagia?
Is swallowing painful?
Do you get chest pain?
Does food get stuck when you swallow?
Do you choke or cough with swallowing?
Is there temperature sensitivity to dysphagia (especially cold)?
Has there been weight loss?

Basic Science

Dysphagia can be classified into four categories, based on the location of the swallowing impairment: oropharyngeal, esophageal, esophagogastric, and paraesophageal (Figure 82.1). These four types occur in four separate but continuous anatomic areas. Table 82.2 lists the causes of these types of dysphagia; associated symptoms are given in Table 82.3.

Oropharyngeal dysphagia occurs when there is difficulty moving the food bolus from the oral cavity to the cervical esophagus. Normal oropharyngeal swallowing requires a coordinated voluntary transfer of food from the mouth into the pharynx, followed by rapid transfer of the bolus into the upper esophagus. Symptoms relate to difficulty in the initiation or initial transport of a solid or liquid food bolus. This may include the sensation (and occurrence) of food sticking in the oral cavity or neck region, as well as symptoms of pulmonary aspiration. Various neuromuscular disorders

Table 82.2
Causes of Dysphagia

	Motor	Physical obstruction
Oropharyngeal	Upper esophageal sphincter dysfunction Cerebrovascular disease Parkinson's disease Peripheral neuropathy Myasthenia gravis Myopathy	Oropharyngeal carcinoma Congenital web Zenker's diverticulum
Esophageal	Diffuse esophageal spasm Achalasia Vigorous achalasia Scleroderma Diabetes mellitus	Esophageal carcinoma Reflux esophagitis Peptic stricture Schatski ring
Esophagogastric	Achalasia	Gastric carcinoma Stricture
Paraesophageal		Thyromegaly Cervical spine disease Left atrial enlargement Postsurgical scarring Lymphadenopathy (mediastinal or cervical)

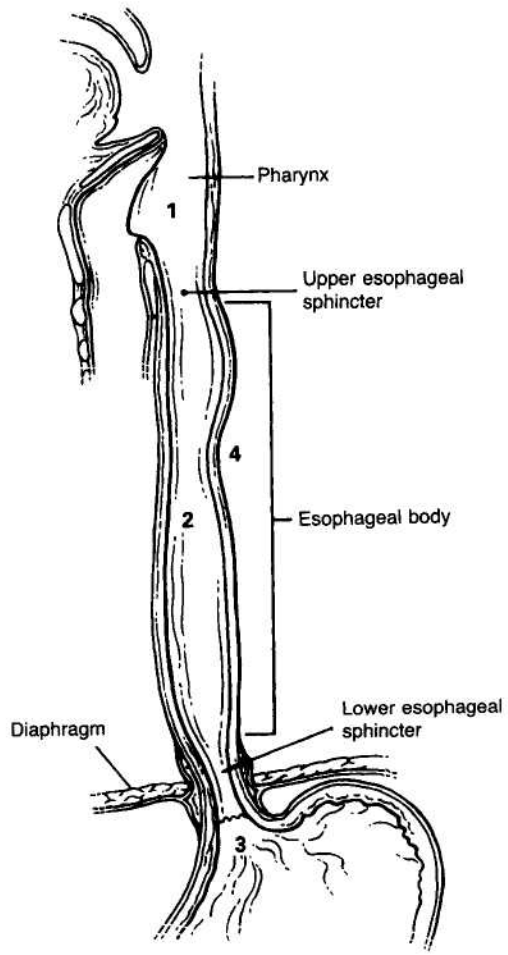

Figure 82.1
Anatomical localization of the four types of dysphagia: oropharyngeal dysphagia (Location 1); esophageal dysphagia (Location 2); esophagogastric dysphagia (Location 3); and paraesophageal dysphagia (Location 4)

Table 82.3
Symptoms Ascribed to Specific Disorders

Symptom	Disorder
Difficulty initiating swallow	Oropharyngeal dysphagia
Coughing or choking with swallowing	
Nocturnal aspiration	
Dysphagia for solids is greater than that for liquids	Physical obstruction
Dysphagia for liquids is greater than or equal to that for solids	Motor disorder
Intermittent dysphagia	Motor disorder Schatski ring
Heartburn and dysphagia	Reflux esophagitis Reflux stricture

are associated with this type of dysphagia, accounting for 75 to 85% of causes. Anatomic anomalies of the oropharynx can also cause such anomalies. The most common cause relates to dysfunction of the upper esophageal sphincter. This dysfunction may occur because of failure of the upper esophageal sphincter to relax or because of the lack of this relaxation to be coordinated with pharyngeal contraction.

Esophageal dysphagia occurs when there is difficulty with the passage of solid or liquid material through the esophagus, specifically the region between the upper and lower esophageal sphincter. It results from either abnormal motility of this segment of the esophagus or physical impairment to passage (obstruction). The mechanisms mediating normal esophageal peristalsis are not fully understood, but require smoothly coordinated muscular contraction in one segment with muscular relaxation in adjacent segments.

Symptoms, while relating to disordered food transport, will depend on the etiology of the esophageal disturbance. Motility disturbances will have dysphagia for liquids as well as solids. No narrowing of the esophageal lumen and no compression of the esophagus occurs. Motility disorders are

characterized by abnormalities in the number of contractions, the velocity of contractions, the force of contraction, the coordinated timing of contractions, or several of these parameters. As a result, symptoms in addition to dysphagia may include spasm (lack of coordinated contractions) or chest pain (extremely forceful, high-pressure contractions).

When physical obstruction causes dysphagia, the swallowing difficulty for solids is always greater and occurs earlier than for liquids. Symptomatic dysphagia for solids generally occurs when the esophageal lumen is narrowed to less than 12 mm. Dysphagia for liquids may occur when dysphagia for solids arises, or it may not occur until later when the esophageal lumen is narrowed by half or more.

Esophagogastric dysphagia occurs when there is impairment of passage of material from the lower esophageal sphincter into the gastric fundus due to motor or physical obstruction. Causes include abnormalities of the lower esophageal sphincter, benign or malignant strictures of the distal esophagus, and mass lesions of the gastric cardia. Hypertension of the lower esophageal sphincter, typified by achalasia, leads to dysphagia because of inadequate relaxation of the sphincteric musculature adjoining the distal esophagus and stomach. It creates a sensation of food sticking at the lower end of the sternum. Other symptoms of motility disorders may include odynophagia as well as chest pain resulting from forceful nonpropulsive esophageal contractions. Mass lesions of the gastric cardia create an impairment to the normal flow of food to the stomach. *Paraesophageal dysphagia* occurs when there is either physical impingement on the esophageal wall and lumen or infiltration of the esophageal wall leading to obstruction. If extensive, this may have secondary motor effects on the esophagus.

While pain in the oropharynx is localized in the neck region, esophageal pain is spread along a six-dermatomal distribution, so that esophageal pain may present anywhere in the chest. Dermatomes T1 through T4 provide sensory innervation for the thoracic surface between the neck and the xiphoid process, as well as the anteromedial surface of both upper extremities. The thoracic viscera also provide sensory innervation to these dermatomes; and sources of sensory innervation include the esophagus, myocardium, pericardium and other mediastinal structures. Similarly, dermatomes T5 and T6 receive innervation from the lower thoracic wall, the diaphragmatic surface, stomach, duodenum, pancreas, and gall bladder. Irritation to any of these visceral structures can present as poorly localized pain along the T1 to T6 dermatome distribution.

Clinical Significance

Dysphagia is one of the most reliable symptoms that can be elicited in the medical history. Its presence localizes the patient's symptoms to the esophagus. The classification of dysphagia, as related to location, includes oropharyngeal, esophageal, esophagogastric, and paraesophageal. All dysphagia (except paraesophageal dysphagia) is caused by either motor disturbance or physical narrowing of the esophagus. Paraesophageal dysphagia is due to extrinsic compression or infiltration of the esophagus that results in narrowing of the lumen.

Oropharyngeal dysphagia results from neuromuscular disease in greater than three quarters of cases. The upper esophageal sphincter is commonly involved. This dysphagia is commonly episodic, although it may be unrelenting. Aspiration is frequent, and pain may occur. Specific diagnoses include cerebrovascular accident, Parkinson's disease, multiple sclerosis (central nervous system); bulbar poliomyelitis, diabetic neuropathy and mononeuritis multiplex (peripheral nervous system); myasthenia gravis (motor end plate); and dermatomyositis, poliomyositis, and thyroid disease (skeletal muscle).

Structural lesions of the oropharyngeal region commonly include neoplasia, congenital webs, and Zenker's diverticulum. They produce symptoms similar to those caused by motor disturbances but, unlike motor abnormalities, they cause symptoms that are often unremitting and progressive.

The clinical significance of esophageal and esophagogastric disorders include motility abnormalities, obstructive lesions, and a combination of the two. Two of the best-known esophageal *motility disorders* are diffuse esophageal spasm and achalasia. Diffuse esophageal spasm is characterized by high-pressure, repetitive, simultaneous (rather than peristaltic) contractions in the smooth muscle portion of the esophagus, resulting in pain and spasm as well as dysphagia. Regurgitation may occur because of the uncoordinated swallowing. The principal symptom of achalasia is dysphagia. The lower esophageal sphincter is hypertensive and fails to relax completely with swallowing. To compound the problem, peristaltic activity is absent. The degree of dysphagia occurring with achalasia is variable with occasional patients recognizing their symptoms only in retrospect. When chest pain accompanies the typical findings of achalasia, the syndrome of "vigorous achalasia," with a hypertensive lower esophageal sphincter and high-pressure esophageal contractions, is often present. Dysphagia due to motor abnormalities can also occur in diabetes mellitus and scleroderma. In both these entities, there are weak or absent esophageal contractions with ineffective peristalsis.

Obstructive lesions of the esophagus often produce progressive and unremitting dysphagia. This is most characteristic of esophageal mass neoplasms, but is also true of benign and malignant strictures of the esophagus and neoplasms of the gastric cardia. Pain may be associated with swallowing. Sudden, episodic dysphagia is associated with a lower esophageal mucosal ring, known as a *Schatski ring*. A Schatski ring often becomes symptomatic with the swallowing of a bolus of meat and is also known as the "steakhouse syndrome." A hiatal hernia is often found in association with a Schatski ring.

Inflammatory lesions of the esophagus can also cause dysphagia. The most common is reflux esophagitis. The inflammation or associated ulceration may be so severe that a sensation of obstruction may result, although more often the obstruction will be due to a peptic stricture. Infectious causes or caustic substances, either acid or alkali, will cause acute inflammation with dysphagia and progression to stricture formation. Thus, dysphagia caused by inflammation and stricture may be due to disordered motility of that segment as well as physical narrowing.

Paraesophageal lesions can mimic the obstructive symptoms of dysphagia. Causes include thyromegaly, mediastinal neoplasia, left atrial enlargement, anomalous aorta, and prior surgery or radiation. In such cases, dysphagia, while a sign of esophageal dysfunction, becomes a sign of primary disease in another organ.

References

Castell DO, Johnson LF, eds. Esophageal function in health and disease. New York: Elsevier Biomedical, 1983;31–46.

Galambos JT, Hersh T. Digestive diseases. Boston: Butterworths, 1983;3–9.

Gambescia RA, Rogers AI. Dysphagia—diagnosis by history. Postgrad Med 1976;59:211–16.

Hurwitz AL, Duranceau A, Haddad JK. Disorders of esophageal motility. Philadelphia: W. B. Saunders, 1979; 1–117.

Sleisenger MH, Fordtran JS. Gastrointestinal disease. Philadelphia: W. B. Saunders, 1983;61–64, 145–48.